

1-16. (CANCELED)

17. (NEW) A method of identification and control of handling of keys, the method comprising the steps of:

- associating an identification and control device (3) with each desire key, each identification and control device (3) comprising a pin-like, hollow shell (26) with a device printed circuit card (42) and a chip (43) mounted therein, and the chip (43) having a unique code for each identification and control device (3), and each identification and control device (3) being insertable into a hole (23) in a local control unit (2), the control unit (2) being connected to a control center (4) into which an identification code of a user can be fed whereby the control center (4) transmits the identification code to the control unit (2);

- sending information from the device printed circuit card (42) and the chip (43) of the identification and control device (3) to the unit printed circuit card (18) of the control unit (2);

- registering and indicating, via the control center (4) and the control unit (2), respectively, removal and reinsertion of each respective identification and control device (3);

- mounting the control unit (2) in a key cabinet (50) locked by a code lock which requires a user to enter an identification code in order to open the key cabinet;

- upon the user entering a proper identification code, providing access to the key cabinet and forwarding a signal to the unit printed circuit card (18) of the control unit (2) to indicate, with a diode lamp (25), at least one of:

- each return key position for any removed identification and control device (3);

- each authorized key removal with a green light; and

- each nonauthorized key removal with a red light;

- when an authorized key is removed, sending a signal, via the unit printed circuit card (18), to the control center (4) having a central printed circuit card where such authorized key removal is registered and stored;

- when a non-authorized key is removed, sending an alarm signal, via the unit printed circuit card (18), to an alarm device;

- while access to the key cabinet is provided, registering all key activity of the key cabinet;

illuminating a corresponding diode, upon a user returning a key and providing an identification code, to indicate where the key is to be returned; and

indicating, via the control center (4), at least one of:

- an identify of the user removing a key;
- a removal time;
- a return time;
- a key cabinet (50) unlock time;
- a key cabinet (50) lock time; and
- a return of a key before a specific time.

18. (NEW) An apparatus for key identification and control, the apparatus comprising:

an identification and control device (3) associated with each desire key, each identification and control device (3) comprising a hollow shell (26) with a device printed circuit card (42) and a chip (43) mounted therein, and the chip (43) having a unique code for each identification and control device (3), and each identification and control device (3) being insertable into a hole (23) in a local control unit (2), the control unit (2) being connected to a control center (4) into which an identification code of a user can be fed whereby the control center (4) transmits the identification code of the user to the control unit (2);

the device printed circuit card (42) and the chip (43) of the identification and control device (3) being coupled to the unit printed circuit card (18) of the control unit (2) for sending information thereto;

registering and indicating, via the control center (4) and the control unit (2), respectively, removal and reinsertion of each respective identification and control device (3);

the control unit (2) being mounting in a key cabinet (50) locked by a code lock which requires a user to enter an identification code in order to access the key cabinet;

upon the user entering a proper identification code, the key cabinet is accessed and a signal is forwarded to the unit printed circuit card (18) of the control unit (2) to indicate, with a diode lamp (25), at least one of:

each return key position for any removed identification and control device (3);

each authorized key removal with a green light; and  
each non-authorized key removal with a red light;

when an authorized key is removed, the unit printed circuit card (18) sends a signal to the control center (4), having a central printed circuit card, where such authorized key removal is registered and stored;

when a non-authorized key is removed, the unit printed circuit card (18) sends an alarm signal to an alarm device;

while the key cabinet is opened, the apparatus registers all key activity thereof;

upon a user returning a key and providing an identification code, the apparatus illuminating a corresponding diode to indicate where the key is to be returned; and

the control center (4) indicating at least one of:

an identify of the user removing a key;

a removal time;

a return time;

a key cabinet (50) unlock time;

a key cabinet (50) lock time; and

a return of a key before a specific time.

19. (NEW) The apparatus according to claim 18, wherein the control unit (2) comprises a strip of a plurality of identification and control devices (3) which each have a fastener (29) at one end thereof for at least one key, the control unit (2) comprises a U-shaped frame work (5) having longitudinal edges of the legs (11, 13) which extend in opposite directions to one another and each terminates in a flange (6) which has a plurality of projecting eyes (7) therein for receiving screws to fasten the control unit (2) to a wall, a U-shaped fastening profile (8) is inserted within the U-shaped frame work (5) and the U-shaped fastening profile (8) has a base leg (9) which lies in a plane defined by the flanges (6), a free longitudinal edge of the base leg (9) has a bearing leg (10) which abuts against the inner surface of one of the legs (11) of the U-shaped frame work (5), the second leg (12) of the U-shaped fastening profile (8) extends parallel to the other leg (13) of the U-shaped frame work (5), a plurality of spacing sleeves (16)

separate a front side (14) of the U-shaped frame work (5) from the base leg (9), and bolts (15) fasten the base leg (9) to the U-shaped frame work (5).

20. (NEW) The apparatus according to claim 19, wherein at least one fastener (17) connects the unit printed circuit card (18) to the second leg (12) of the U-shaped fastening profile (8), a contact (19) extends from the unit printed circuit card (18) toward one of the legs (11) of the U-shaped frame work (5) and the contact (19) comprises a ribbon disposed parallel to the front side (14) of the U-shaped frame work (5), the ribbon comprises at least one electric cable for each one of the identification and control devices (3), and the base leg (9) for the U-shaped fastening profile (8) supports, on a side thereof which faces the front side (14) of the U-shaped frame work (5), a plurality of permanent magnets (22) with one of the plurality of permanent magnets (22) associated with each one of the identification and control devices (3).

21. (NEW) The apparatus according to claim 20, wherein a front surface of the U-shaped frame work (5) has a plurality of holes (23) therein for receiving one of the identification and control devices (3), each hole has an inwardly bent collar (24) for providing a guiding effect for a respective one of the identification and control devices (3), the front of the U-shaped frame work (5) supports a plurality of diode lamps (25) thereon with each one of the plurality of diode lamps (25) associated with one of the holes (23) and coupled to the unit printed circuit card (18) and, once one of the identification and control devices (3) is fully inserted within a respective one of the holes (23), an associated one of the plurality of diode lamps (25) indicates to a user one of key authorization and key non-authorization.

22. (NEW) The apparatus according to claim 18, wherein the hollow shell (26) of each one of the identification and control devices (3) is made of metal, an outer end (27) of the shell (26) is provided with a through hole (28) for receiving a key ring (29) to facilitate fastening of at least one key to the identification and control device (3), the shell (26) comprises a front inner part (30) and a rear outer part (31), the front inner part (30) and the rear outer part (31) each have facing cylindrical recesses (34 and 35, respectively) which together receive a carrier (36) made of an electrically isolating material, the carrier has a press fit within the recesses, an electrically isolating flange (41) extends around the center of the shell and separates the front inner part (30) and the rear outer part (31) from one another, a respective compression spring spaces

each opposed end of the device printed circuit card (42) from a respective bottom recess, and a leading end of each identification and control device (3) has a recess (44) which supports a steel washer (45), and the steel washer (45) cooperates with the ribbon (19) and one of the plurality of permanent magnets.

23. (NEW) An apparatus for key identification and control, the apparatus comprising:

an identification and control device (3) associated with each desire key, each identification and control device (3) comprising a hollow shell (26) with a device having a unique code for each identification and control device (3), and each identification and control device (3) being insertable into a hole (23) in a local control unit (2), the control unit (2) being connected to a control center (4) into which an identification code of a user can be fed whereby the control center (4) transmits the identification code of the user to the control unit (2);

the device, having the unique code for each identification and control device (3), being coupled to the unit printed circuit card (18) of the control unit (2) for sending information thereto;

registering and indicating, via the control center (4) and the control unit (2), respectively, removal and reinsertion of each respective identification and control device (3);

the control unit (2) being mounting in a key cabinet (50) locked by a code lock which requires a user to enter an identification code in order to access the key cabinet, and, upon the user entering a proper identification code, access to the key cabinet is provided and a signal is forwarded to the unit printed circuit card (18) of the control unit (2) to indicate, with a diode lamp (25), at least one of:

a return key position for any removed identification and control device (3);

each authorized key removal for a user; and

each nonauthorized key removal for a user;

when an authorized key is removed, the unit printed circuit card (18) sends a signal to the control center (4) which registers and stores such authorized key removal;

when a nonauthorized key is removed, the apparatus activates an alarm device;

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upon a user returning a key and providing an identification code, the apparatus illuminating a corresponding diode to indicate where the key is to be returned; and

the control center (4) indicating at least one of:

an identify of the user removing a key;

a removal time;

a return time;

a key cabinet (50) unlock time;

a key cabinet (50) lock time; and

a return of a key before a specific time.